



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.		
10/559,844	12/07/2005	Nobuyuki Ishikawa	JFE-05-1735	1864		
35811	7590	07/30/2008	EXAMINER			
IP GROUP OF DLA PIPER US LLP ONE LIBERTY PLACE 1650 MARKET ST, SUITE 4900 PHILADELPHIA, PA 19103				YEE, DEBORAH		
ART UNIT		PAPER NUMBER				
1793						
MAIL DATE		DELIVERY MODE				
07/30/2008		PAPER				

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/559,844	ISHIKAWA ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Deborah Yee	1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 07 May 2008.  
 2a) This action is **FINAL**.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 25-48 is/are pending in the application.  
 4a) Of the above claim(s) 35-48 is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 25-34 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 07 December 2005 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____ .
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)	5) <input type="checkbox"/> Notice of Informal Patent Application
Paper No(s)/Mail Date _____.	6) <input type="checkbox"/> Other: _____ .

## DETAILED ACTION

### ***Election/Restrictions***

1. Claims 35-48 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on May 7, 2008.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 25 to 34 stand rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 5,744,895 to Tamehiro et al.

4. As stated in Examiner's previous office action, Tamehiro et al. in claims 1 to 12 of columns 17-20 discloses a hot rolled steel plate having a composition with constituents whose wt% ranges overlap those recited by the claims; and such overlap establishes a *prima facie* case of obviousness. In addition, prior art steel exhibits a microstructure comprising ferrite, bainite and martensite, whereby ferrite fraction is 20 to 90%, which would overlap and suggest the claimed structure comprising ferrite, bainite and 3-20% martensite.

5. More specifically, prior art steel example 8 in table 3 of columns 13-14 meets the claimed composition and when calculated, satisfies or closely satisfies the recited equations as follows: condition (2) = 1.6 within the 1.2 to 3 recited by claims 25;

$C/(Mo+Ti) = 2.466$  within the range of 1.2 to 3 recited by claim 26; and  $C/(Ti + Nb + V) = 4.1$  closely approximate 1.2 to 3 recited by claims 27 and 30. In addition, example 8 in table 4 of columns 13-14 discloses a structure of 82% ferrite with the remainder being 18% bainite + martensite which would closely teach Applicant's claimed structure of ferrite, bainite with about 3 to about 20% island martensite.

6. Even though prior art does not teach steel containing complex precipitates as recited by the claims, such would be expected since its process of making comprises substantially the same steps as the present invention with overlap in temperature ranges. Note Tamehiro et al. starting on line 52 and ending on line 7 of column 10 subjects steel slab to heating within the range of 950-1300°C (overlaps inventive range of about 1000 to about 1300°C), hot rolling with the cumulative reduction quantity of 10 to 70% at the ferrite-austenite two phase zone of Ar3 to Ar1 point with the hot rolling finish temperature at 650 to 800°C (overlaps with the inventive finishing temperature of about Ar3 or more), accelerated cooling at a cooling rate of at least 10°C/sec to a temperature not higher than 500°C (overlaps with the inventive cooling rate of about 5°C/sec or more to a temperature of about 450 to about 650°C) and discloses tempering by reheating 550°C for 20 minutes as shown in table 6 of columns 15-16 (within the inventive range of 550 to 750°C).

***Response to Arguments***

7. Applicant's arguments filed May 7, 2008 have been fully considered but they are not persuasive

8. Applicant argued that Tamehiro et al. does not teach a hot rolled steel plate, as claimed, containing complex carbides precipitated in the ferrite phase; and such complex carbides would not be expected since process of making is different from present invention. It was argued that present invention process teaches a hot rolled finishing temperature of 870°C or greater, which is significantly higher than the prior art hot rolling finish temperature of 650 to 800°C.

9. It is the Examiner's position that prior art steel plate is processed in substantially the same manner as taught by present invention. Although Applicant stated the present invention requires a hot rolling finishing temperature of  $\geq 870^{\circ}\text{C}$ , this is merely base on specific examples shown in tables 1-8 of the instant specification. Note that the broader disclosure of Applicant's specification in paragraph [0063] teaches that a hot rolling finishing temperature range of about Ar3 or more is acceptable to achieve the dispersion of complex carbide precipitates. Therefore, the prior art hot rolling finishing temperature of Ar1 to **Ar3** would overlap and suggest Applicant's hot rolling finishing temperature of **about Ar3** or more.

10. In addition, inventive examples A to J shown in table 1 of Applicant's specification have Ar3 values ranging from 710 to 765°C which would be the lower limit for Applicant's hot rolling finishing temperature of Ar3 or more; and are within the prior art finishing temperature range of 650 to 800°C. Also it should be noted that inventive process example 13 in table 2 is subjected to hot rolling with a finishing temperature at 780°C and is within the prior art claimed range of 650 to 800°C. Since hot rolling finishing temperature is closely met, and in absence of comparative test data to

establish the criticality of  $\geq 870^{\circ}\text{C}$ , then present invention process would not patentably differ from Tamehiro et al.

11. It was argued that Tamehiro et al. does not teach a microstructure comprising an area fraction of island martensite about 3 to about 20%. It is the Examiner's position that example 8 in table 4 of columns 13-14 discloses a structure of 82% ferrite with the remainder being 18% bainite + martensite which would closely teach Applicant's claimed structure of ferrite, bainite with about 3 to about 20% island martensite. Also since example 8 meets the claimed composition and closely meets the process of making, then 3 to 20% island martensite would be expected in absence of proof to the contrary.

12. With regard to the 103 rejection over Asahi, it has been withdrawn since its disclosure is essentially the same as Tamehiro et al.

### ***Conclusion***

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Deborah Yee whose telephone number is 571-272-1253. The examiner can normally be reached on monday-friday 6:00 am-2:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Deborah Yee/  
Primary Examiner  
Art Unit 1793

/DY/